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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROLAND M. HOCHMUTH, JOHN MARKS,
and DAVID JOHN SWEETSER

Appeal 2007-2923
Application 09/960,523
Technology Center 2600

Decided: January 14, 2008

Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and JOHN A.
JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

1 Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-19. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellants invented a system for communicating graphics over a network. Specifically, current and previous frames of graphics information are stored and compared to determine whether a portion of the current frame differs from a corresponding portion of a previous frame by more than a predetermined amount. If so, only that portion of the current frame is transmitted to a destination computer.¹ Claim 1 is illustrative:

1. An apparatus for communicating graphics across a network comprising:

a frame buffer memory for storing and maintaining at least a portion of a previous frame of graphics information, the graphics information being contained in a video signal;

a temporary memory configured to store at least a portion of a current frame of graphics information;

comparison logic for comparing a portion of the current frame of graphics information with a corresponding portion of the previous frame, wherein the portion is an amount less than the entire frame buffer; and

transmission logic for transmitting only the portion of the current frame to a destination computer, if the comparison logic determines that the portion of the current frame of graphics information differs from the corresponding portion of the previous frame by more than a predetermined measure.

The Examiner relies on the following prior art references to show unpatentability:

Szamrej	US 5,990,852	Nov. 23, 1999
Gosselin	US 6,094,453	Jul. 25, 2000
Schauser	US 6,331,855 B1	Dec. 18, 2001
		(filed Apr. 28, 1999)

¹ See generally Spec. 2:18-3:16.

1. Claims 1-3, 6-8, 13, 14, 16, 17, and 19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Schauser.
2. Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Schauser.
3. Claims 5, 15, and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Schauser and Szamrej.
4. Claims 4 and 9 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Schauser and Gosselin.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Brief² and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Brief have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

We first consider the Examiner's rejection of claims 1-3, 6-8, 13, 14, 16, 17, and 19 under 35 U.S.C. § 102(e) as being anticipated by Schauser. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984); *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983).

² We refer to the most recent Appeal Brief filed Jan. 6, 2006 throughout this opinion.

The Examiner has indicated how the claimed invention is deemed to be fully met by the disclosure of Schauser (Ans. 3-4). Regarding representative claim 1, Appellants argue that, unlike the claimed invention, Schauser does not interact at the frame buffer level, but rather at a much higher level via small host and client executable programs. As such, Appellants argue, Schauser fails to disclose the recited frame buffer memory, comparison logic, and transmission logic limitations (App. Br. 5-9). Although Appellants acknowledge that Schauser's system detects and forwards changes in lines, tiles, areas, or regions of the screen to a remote computer, Appellants nonetheless contend that Schauser lacks any teaching as to any *threshold measure* that triggers or limits the transmission (App. Br. 9-10).

In response, the Examiner maintains that Schauser teaches that changes are determined between corresponding portions of a currently-displayed image (stored in frame buffer 18) and a previously-displayed image (stored in system memory 16). The Examiner argues that these changes are determined via comparison logic and occur in the hardware level of the system memory and frame buffer (Ans. 7-8).

We will sustain the Examiner's rejection of representative claim 1. In Schauser, a source processing system 2 detects and updates changes to its desktop and forwards these detected changes to the remote processing system 4 via communication or transportation medium 6 (Schauser, col. 3, l. 57 - col. 4, l. 6; Fig. 1A). To this end, the CPU 12 of the processing system polls the desktop periodically to determine if there are any changes to the image displayed on the desktop. The CPU may poll particular line(s), areas, or subregions on the screen (Schauser, col. 4, l. 64 - col. 5, l. 15).

Each frame of pixels that are currently displayed is stored in frame buffer 18, while the pixels representing a previously displayed image are stored in system memory 16. A portion of the currently displayed image is compared to a corresponding portion of a previously displayed image to determine if changes have occurred. If so, the changes are stored and/or forwarded to the remote computer 4 (Schauser, col. 5, ll. 15-23; col. 6, ll. 40-42; Fig. 1A). In one embodiment, the remote computer 4 receives the changes forwarded by the source computer and updates the pixels in its frame buffer for display on the remote computer (Schauser, col. 5, ll. 35-47).

We agree with the Examiner that Schauser's system memory 16 which stores pixels representing a *previously displayed* image fully meets the recited "frame buffer memory." We also agree with the Examiner that Schauser's frame buffer 18, which stores frames of pixels of the *currently displayed* image, reasonably corresponds to the recited "temporary memory." Although the frame buffer 18 in Schauser does not actually correspond to the recited "frame buffer memory" (since Schauser's frame buffer stores pixels of the currently displayed image -- not the previously displayed image), the scope and breadth of the claim language simply does not preclude the Examiner's interpretation.

Significantly, Schauser expressly states that *each frame* of pixels that is currently displayed is stored in the frame buffer 18. Schauser also notes that *the pixels* representing a previously displayed image are stored in the system memory 16 (Schauser, col. 5, ll. 15-19; emphasis added). The clear import of this discussion is that the storage and subsequent comparison of corresponding portions of these respective images would at least involve frames of pixels.

We also agree with the Examiner that Schauser fully meets the recited transmission logic limitation. As shown in Figure 5, Schauser's system (1) detects a changed pixel, (2) determines the area that changed, and (3) transmits the change to the remote system (Schauser, col. 8, ll. 3-15; Fig. 5). By its very nature, detecting just one changed pixel between currently and previously displayed images would indicate a difference by more than a predetermined measure. In such a case, the "predetermined measure" would be no pixel changes at all: a difference that is null, but nonetheless quantifiable.

For at least the foregoing reasons, we will sustain the Examiner's anticipation rejection of representative claim 1. Likewise, we will sustain the rejection of claims 2, 3, 6-8, and 13 which fall with claim 1.

Independent Claim 14

Regarding claim 14, we agree with the Examiner (Ans. 8) that Schauser reasonably teaches the disputed "input logic" limitation. As the Examiner indicates, the remote computer 4 in Schauser receives the changes forwarded by the source computer and *updates the pixels in its frame buffer* for display on the remote computer (Schauser, col. 5, ll. 35-47; emphasis added). Updating pixels in the frame buffer responsive to received changes, in our view, would involve formatting and storing at least a portion of a frame of pixels into an appropriate location of a frame buffer memory. Since we find Schauser reasonably discloses all limitations of claim 14, the rejection is therefore sustained.

Independent Claim 16

We will also sustain the Examiner's rejection of representative independent claim 16 essentially for the reasons indicated by the Examiner (Ans. 8-9). Further, as we indicated in connection with claim 1, we find that the storage and subsequent comparison of corresponding portions of the currently displayed images and previously displayed images would at least involve frames of pixels. Moreover, Schauser's system (1) detects a changed pixel, (2) determines the area that changed, and (3) transmits the change to the remote system (Schauser, col. 8, ll. 3-15; Fig. 5). Such a system, in our view, fully meets the disputed limitation calling for transmitting the compared portion of the current frame to a destination computer. As we indicated previously, detecting just one changed pixel between currently and previously displayed images would indicate a difference by more than a predetermined amount.

For at least the foregoing reasons, we will sustain the Examiner's rejection of representative independent claim 16 as well as claims 17 and 19 which fall with claim 16.

The Obviousness Rejections

We now consider the Examiner's obviousness rejections. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of a patent that claims a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraidia v. AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 1740–41. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner’s burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence.

Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Claims 10-12

Regarding the Examiner's obviousness rejection of claims 10-12 based solely on Schauer (Ans. 4-5), Appellants did not separately argue the merits of this rejection apart from including these claims in earlier arguments made in connection with the anticipation rejection (App. Br. 8-10) (arguing claims 1-13). Since we are unpersuaded by Appellants' arguments for the reasons indicated previously, and since Appellants have not persuasively rebutted the Examiner's prima facie case of obviousness, the Examiner's rejection of claims 10-12 is therefore sustained.

Claims 5, 15, and 18

Regarding the Examiner's obviousness rejection of claims 5, 15, and 18 over Schauer and Szamrej (Ans. 5-6), the Examiner adds the disclosure of Szamrej for teaching compressing and decompressing graphics information for transmission and concludes that it would have been obvious to the skilled artisan at the time of the invention to combine such teachings with Schauer (Ans. 5-6).

Appellants do not dispute the Examiner's findings regarding the specific teachings of Szamrej, but rather contend that there is no proper motivation or suggestion to combine the selected teachings from the references. Appellants add that the Examiner's stated motivation (i.e., to provide a screen transfer method that efficiently uses CPU resources,

memory, and bandwidth) is not sufficiently relevant to the claimed invention (App. Br. 14-15).

We agree with the Examiner (Ans. 9-10) that both cited references pertain to transmitting graphics information over a computer network, and Szamrej teaches compressing and decompressing graphics information (Szamrej, col. 8, ll. 36-57; col. 1, ll. 44-65). As such, we see no reason why the skilled artisan would not have referred to the teachings of Szamrej to compress graphics information prior to transmission and decompress graphics information upon receipt in the system of Schauser. At a minimum, such techniques would more efficiently transmit graphics information over communication networks. The fact that the claims do not specify CPU resources or bandwidth as Appellants contend (App. Br. 15) hardly forecloses combining the references in the manner indicated by the Examiner.

For the foregoing reasons, the Examiner's rejection of claims 5, 15, and 18 is sustained.

Claims 4 and 9

We will also sustain the Examiner's obviousness rejection of claims 4 and 9 based on Schauser and Gosselin. The Examiner relies upon the disclosure of Gosselin for the teachings of (1) an analog video signal, and (2) formatting the graphics information to be transmitted into internet protocol (IP) packets and concludes that combining these teachings with Schauser would have been obvious to the skilled artisan (Ans. 6-7). Appellants do not dispute the Examiner's findings regarding the specific teachings of Gosselin, but rather contend that there is no proper motivation

or suggestion to combine the selected teachings from the references (App. Br. 15-16).

We will sustain the Examiner's rejection as we find ample suggestion to combine the references. In our view, the skilled artisan would have reasonably been motivated to use IP packets for transmission over the communication medium 6 of Schauser, particularly since Schauser notes that this medium can be a network (Schauser, col. 4, ll. 3-6). Since Gosselin teaches storing changes from a base image in a header file and formatting pixel data into packets for transmission (Gosselin, col. 3, ll. 8-32; col. 13, ll. 19-34), we see no reason why skilled artisans would not use commensurate techniques in Schauser. At a minimum, such techniques would facilitate the efficient transfer of data via the communication medium. The Examiner's rejection of claims 4 and 9 is therefore sustained.

DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1-19 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

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Application 09/960,523

AFFIRMED

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